Irrigated Lands Regulatory Program

SWAMP 2.5 Comparable Data Submission Guide for Project Managers

Water Quality Toxicity Data

20 August 2008

Table of Contents

This document provides for the guidelines for the formatting of water quality toxicity analysis data prior to submission to the Irrigated Lands Regulatory Program per the requirement detailed in Section III.B of the Monitoring and Reporting Program for Coalition Groups, Order No. R5-2008-0005. It is important that the guidelines within this document be followed to the best of ones abilities to ensure that data submitted will be comparable in format and entry business rules. Following these guidelines will aid in the correct and complete loading of the data. Data submissions that do not meet these guidelines, excluding minor changes needed, will be returned to the submitter for corrections. Until the submitted data worksheets are deemed to be correct in format by the ILRP Data Management Staff, they will be considered "pending" and not meeting the conditions of the Electronic Data Submission Requirement in its entirety.

Water Quality Toxicity Data

The toxicity workbook contains three worksheets labeled "Tox Summary", "Tox Results" and "LabBatch".

The "Tox Summary" worksheet holds toxicity core summary data including the mean, toxicity significant, and percent of control. Both the environmental sample and negative control should be included in this worksheet. TIEs and reference toxicant tests are not required to be recorded and submitted electronically.

The "Tox Results" worksheet holds toxicity replicate data including in-test water quality measurements. This worksheet should compliment the Tox Summary and provide the data that was used to calculate the results found in the summary. Providing this data will allow for external statistical analysis of the toxicity test replicates as well as provide environmental conditions of the samples to account for variability of the results and quality control review.

The "Tox Batch" worksheet holds summary and validation information of the laboratory batches recorded within the results worksheet.

Specific details on how to enter each sample type will be described in the section following the column heading descriptions below. Descriptions below are modified from the MPSL-MLML SWAMP Database Training Document, located: http://mpsl.mlml.calstate.edu/swamp.htm.

Column Heading Descriptions – Tox Summary

Column: Label (R = Required, O = Optional) Description.

A. **Lab Sample ID** The Lab Sample ID is assigned by the laboratory to provide identification for an analyzed sample. The format and content is determined by the lab and can be located on the results summary sheet for a sample.

B. **StationCode** The station code is a 9-digit assigned code that uniquely identifies the monitoring location within the master database. Please see the ILRP SWAMP2.5 Comparable Lookup Lists for a list of already assigned station codes. Please note that the proper station code must be used from the list based on station name as well as latitude and longitude GPS coordinates. If you have a new station that needs a code or if the GPS coordinates differ from those in the monitoring report, please contact Melissa Morris at mmorris@water.ca.gov or 916-464-4845 to coordinate the assignment of a new station code.

C. **StationName – TEMP** This column is a temporary column added to aid in recognition of samples on laboratory sheets that do not use the assigned station code as a unique identifier. This column may also be used to identify sites than do not yet have a Station code assigned.

D. **EventCode** EventCode represents the initial intent of the sampling event at a particular station.

WQ – Use 'WQ' If the primary reason for sampling is for WaterQuality (no associated Bioassessment or Tissue samples collected)

E. **ProtocolCode** ProtocolCode represents the sampling protocol used for a group of samples taken on the same day for the same project at various sites. This column should reference your QAPP SOPs An example includes: 'CoalitionXYZ_FieldGrab_v1.0_2008'.

F. **LocationCode** LocationCode describes the physical location in the waterbody where the sample was collected. Ex: Bank, Thalweg, Midchannel, OpenWater. Please see the ILRP SWAMP2.5 Comparable Lookup Lists for applicable codes.

G. **SampleDate** SampleDate refers to the date the sample was collected in the field, expressed as dd/mmm/yyyy.

H. **CollectionTime** CollectionTime refers to the time when the first sample was collected at that site in the field, expressed as xx:xx. (24 hour clock)

I. **CollectionMethodCode** CollectionMethodCode refers to the general method of collection. 'Water_Grab' is used for all water collection samples and 'Sed_Grab' is used for all sediment samples in this program,

J. **SampleTypeCode** Enter the Sample Type. Please see the ILRP SWAMP2.5 Comparable Lookup Lists for other applicable codes.

Code	Sample Type Description
Grab	Single environmental sample Field duplicates are recorded as 'Grab' with a replicate of '2'.
Integrated	An environmental sample composed of multiple samples.
CNEG	The laboratory toxicity negative control sample.

K. **Replicate** Should remain '1' unless the entry is a field duplicate, then it would equal '2'.

L. **CollectionDepth** The default values for this column, unless otherwise recorded, should be '0.1' for water samples, '2' for sediment samples, or '–88' for non-field generated samples.

M. **UnitCollectionDepth** This field contains the units associated with the above "CollectionDepth" value. The default values for this column, unless otherwise recorded, should be 'm' (meters) for water samples or 'cm' (centimeters) for sediment samples.

N. **ProjectCode** The Project ID is a unique identification number that distinguishes who the data was originated by Please see the ILRP SWAMP2.5 Comparable Lookup Lists for applicable codes.

O. **AgencyCode** Enter the acronym for the Agency that collected the sample. Please see the ILRP SWAMP2.5 Comparable Lookup Lists for applicable codes.

P. **CollectionComments** The comments field should be used for any notes or comments specifically related to the sample collection.

Q. **SampleID** This Sample ID is a unique identification number that distinguishes a sample from others and is created by the organization directing the sampling. Generally this number is used to track the sample throughout the sampling and analyses processes. This number will likely be on the sample container received from the field crew and the associated Chain-of-custody forms. If there is no number, leave blank

Y. **MatrixName** This field describes the sample matrix.

For field-generated samples the matrix should be:

'samplewater' – for all environmental water samples

'sediment' – for all environmental sediment samples

For lab-generated samples the matrix should be:

'labwater' – for all samples created using purchased spring water or laboratory tap water

'blankmatrix' – for all samples created using purchased or created blank medium

'sediment' – for all samples created using reference sediment

Z. **MethodName** The Method is the analysis method that is used by the laboratory to analyze the sample. Methods are expressed such as EPA 300.0. If a laboratory has modified an EPA standard method, the laboratory agency needs to add "M" to the Method Name. Please see the ILRP ILRP SWAMP2.5 Comparable Lookup Lists for applicable codes.

T. **TestDuration** Indicates the duration of the test as a whole number and the associated units. (IE '4 days', '7 days')

U. **OrganismName** OrganismName refers to the scientific name of the species used in the toxicity test. For this program the following species are used:

Ceriodaphnia dubia

Pimphales promelas

Selanastrum capricornutum

Hyallela azteca

V. **ToxBatch** The ToxBatch is assigned by the laboratory and groups all environmental samples and supporting QA samples within a unique analysis batch. It is used to compare field samples with their associated Negative

Controls for statistical analysis and will be used to verify completeness based your QAPP. See *Appendix A* for guidelines on assigning laboratory batch IDs.

W. **ToxTestComments** Use the ToxTestComments field to note any comments necessary to describe special circumstances for the toxicity test for the specific record.

Columns X through AB allow for the recording of dilutions, TIEs, and reference toxicant tests. If you wish to record this information, please contact Melissa Morris at mmorris@waterboards.ca.gov or 916-464-4845 for specific business rules and training.

X. **Treatment** Treatment refers to any treatment performed on the sample, such as a pH adjustment. The default value is 'None'.

Y **Concentration** This field refers to the concentration or value of the analyte being tested for reference toxicity tests, expressed as a number. The default value is 'None'

Z. **Unit Treatment** UnitTreatment refers to the units used in the treatment. The default value is 'None'

AA. **Dilution** Dilution is recorded as a proportion of the original sample. A sample with 80% sample and 20% blankwater has a Dilution Value of 80. The default value is 'None'

AB. **ToxPointMethod** ToxPointMethod refers to the general method used in obtaining or calculating the result. Toxicity replicate and summary data have a default value of 'None'.

AC. **AnalyteName** AnalyteName refers to the parameter being measured. For toxicity samples use 'Survival' and 'Cell Count' as the default value for toxicity summary results.

AD. **FractionName** FractionName is a specific descriptor of the Analyte. The default value is 'None' for toxicity summary results.

AE. **WQ Source** WQSource differentiates between water quality measurements taken in the overlying water. This field should contain 'NA' for all measurements of toxicity survival.

AF. **Time Point** The Time Point indicates the time during the test at which the measurement was taken. For toxicity measurements, the value should reflect the final survival count, such as 'Day 4'. See the Table 1 below for species specific options.

AG. **UnitAnalyte** Enter the unit in which the toxicity result is expressed See the Table 1 below for species specific options.

AH. **Rep Count** The Replicate Count indicates the total number of sample replicates analyzed for the associated endpoint in the Toxicity Test.

AI. **Mean** The mean is the average results calculation from all replicates of a single sample.

AJ. **StdDev** StdDev or standard deviation is a statistic that indicates how tightly all the replicates are clustered around the mean in a set of data. This calculation includes all the applicable replicates from a single sample.

AK. **Statistical Test Code** StatisticalMethod is the statistical test or method used to calculate the probability of whether the sample is significantly different from the control or not.

AL. **AlphaValue** AlphaValue is the predetermined statistical acceptance level that is not calculated, but is chosen by the laboratory.

AM. **Probability** Probability is the calculated probability using a standard statistical analysis between the replicates of the field samples and the control or reference sample within a ToxBatch. Negative control samples (CNEG) probability should remain '0.5'. The default value is '-88'.

AN. **MSD** The minimum significant difference (MSD) criterion qualifies the designation of toxicity in samples with very low replicate variance in the controls.

AO. **PercentControl** Percent Control is the result of dividing the mean of the environmental sample by the mean of the control for the *ToxBatch* and multiplying by 100. Control samples should be reported as 100 for the corresponding endpoint.

AP. **Eval Threshhold** The Irrigated Lands program has not yet assigned an appropriate evaluation threshold for toxicity analysis. '-88' should be used to fill this column until noted otherwise.

AQ. **SigEffect** The Toxicity Significant Effect Code indicates whether the sample result is significantly different from the control. The laboratory sample identified as the control receives a value of 'X' in this field. 'S' should be used for statistically significant samples and 'NS' should be used for non-statistically significant samples.

AR. **TestQACode** TestQACode is applied to each sample's toxpoint to describe any special conditions, situations or outliers that occurred during or prior to the analysis to achieve the result. The default code, indicating no special conditions, is None. If more than one code should be applied to a record, the convention is to list them in alphabetical order separated by commas and no spaces; i.e. BY,TW. Please see the Please see the ILRP SWAMP2.5 Comparable Lookup Lists for all applicable codes.

AS. **Summary Comments** The Summary Comments field holds any summary-related comments.

Table 1. Toxicity Analysis Species Specific Values

Test Duration	Organism Name	Analyte Name	WQ Source	ToxPoint Method	Time Point	Unit Analyte
10 Days	*Hyalella azteca*	Survival	NA	None	Day 10	%
4 Days	*Ceriodaphnia dubia*	Survival	NA	None	Day 4	%
4 Days	*Pimephales promelas*	Survival	NA	None	Day 4	%
4 Days	*Selenastrum capricornutum*	Cell Count	NA	None	Day 4	cells/ml

Column Heading Descriptions – Tox Results

Column: Label (R = Required, O = Optional) Description.

Please Note: Columns B through AA are identical between the CD Summary Worksheet and CD Results worksheet.

A. **Lab Sample ID** The Lab Sample ID is assigned by the laboratory to provide identification for an analyzed sample. The format and content is determined by the lab and can be located on the results summary sheet for a sample.

B. **StationCode** The station code is a 9-digit assigned code that uniquely identifies the monitoring location within the master database. Please see the ILRP SWAMP2.5 Comparable Lookup Lists for a list of already assigned station codes. Please note that the proper station code must be used from the list based on station name as well as latitude and longitude GPS coordinates. If you have a new station that needs a code or if the GPS coordinates differ from those in the monitoring report, please contact Melissa Morris at mmorris@water.ca.gov or 916-464-4845 to coordinate the assignment of a new station code.

C. **StationName – TEMP** This column is a temporary column added to aid in recognition of samples on laboratory sheets that do not use the assigned station code as a unique identifier. This column may also be used to identify sites than do not yet have a Station code assigned.

D. **EventCode** EventCode represents the initial intent of the sampling event at a particular station.

WQ – Use 'WQ' If the primary reason for sampling is for WaterQuality (no associated Bioassessment or Tissue samples collected)

E. **ProtocolCode** ProtocolCode represents the sampling protocol used for a group of samples taken on the same day for the same project at various sites. This column should reference your QAPP SOPs An example includes: 'CoalitionXYZ_FieldGrab_v1.0_2008'.

F. **LocationCode** LocationCode describes the physical location in the waterbody where the sample was collected. Ex: Bank, Thalweg, Midchannel, OpenWater.

G. **SampleDate** SampleDate refers to the date the sample was collected in the field, expressed as dd/mmm/yyyy.

H. **CollectionTime** CollectionTime refers to the time when the first sample was collected at that site in the field, expressed as xx:xx. (24 hour clock)

I. **CollectionMethodCode** CollectionMethodCode refers to the general method of collection. 'Water_Grab' is used for all water collection samples and 'Sed_Grab' is used for all sediment samples in this program,

J. **SampleTypeCode** Enter the Sample Type:

Code	Sample Type Description
Grab	Single environmental sample Field duplicates are recorded as 'Grab' with a replicate of '2'.
Integrated	An environmental sample composed of multiple samples.
CNEG	The laboratory toxicity negative control sample.

K. **Replicate** Should remain '1' unless the entry is a field duplicate, then it would equal '2'.

L. **CollectionDepth** The default values for this column, unless otherwise recorded, should be '0.1' for water samples, '2' for sediment samples, or '–88' for non-field generated samples.

M. **UnitCollectionDepth** This field contains the units associated with the above "CollectionDepth" value. The default values for this column, unless otherwise recorded, should be 'm' (meters) for water samples or 'cm' (centimeters) for sediment samples.

N. **ProjectCode** The Project ID is a unique identification number that distinguishes who the data was originated by Please see the ILRP SWAMP2.5 Comparable Lookup Lists for applicable codes.

O. **AgencyCode** Enter the acronym for the Agency that collected the sample. Please see the ILRP SWAMP2.5 Comparable Lookup Lists for applicable codes.

P. **CollectionComments** The comments field should be used for any notes or comments specifically related to the sample collection.

Q. **SampleID** This Sample ID is a unique identification number that distinguishes a sample from others and is created by the organization directing the sampling. Generally this number is used to track the sample throughout the sampling and analyses processes. This number will likely be on the sample container received from the field crew and the associated Chain-of-custody forms. If there is no number, leave blank

Y. **MatrixName** This field describes the sample matrix.

For field-generated samples the matrix should be:

'samplewater' – for all environmental water samples

'sediment' – for all environmental sediment samples

For lab-generated samples the matrix should be:

'labwater' – for all samples created using purchased spring water or laboratory tap water

'blankmatrix' – for all samples created using purchased or created blank medium

'sediment' – for all samples created using reference sediment

Z. **MethodName** The Method is the analysis method that is used by the laboratory to analyze the sample. Methods are expressed such as EPA 300.0. If a laboratory has modified an EPA standard method, the laboratory agency needs to add "M" to the Method Name. Please see the ILRP ILRP SWAMP2.5 Comparable Lookup Lists for applicable codes.

T. **TestDuration** Indicates the duration of the test as a whole number and the associated units. (IE '4 days', '7 days')

U. **OrganismName** OrganismName refers to the scientific name of the species used in the toxicity test. For this program the following species are used:

Ceriodaphnia dubia

Pimphales promelas

Selanastrum capricornutum

Hyallela azteca

V. **ToxBatch** The ToxBatch is assigned by the laboratory and groups all environmental samples and supporting QA samples within a unique analysis batch. It is used to compare field samples with their associated Negative Controls for statistical analysis and will be used to verify completeness based your QAPP. See *Appendix A* for guidelines on assigning laboratory batch IDs.

W. **ToxTestComments** Use the ToxTestComments field to note any comments necessary to describe special circumstances for the toxicity test for the specific record.

Columns X through AA allow for the recording of dilutions, TIEs, and reference toxicant tests. If you wish to record this information, please contact Melissa Morris at mmorris@waterboards.ca.gov or 916-464-4845 for specific business rules and training.

X. **Treatment** Treatment refers to any treatment performed on the sample, such as a pH adjustment. The default value is 'None'.

Y **Concentration** This field refers to the concentration or value of the analyte being tested for reference toxicity tests, expressed as a number. The default value is 'None'

Z. **Unit Treatment** UnitTreatment refers to the units used in the treatment. The default value is 'None'

AA. **Dilution** Dilution is recorded as a proportion of the original sample. A sample with 80% sample and 20% blankwater has a Dilution Value of 80. The default value is 'None'

AB. **LabReplicate** The LabReplicate identifies the individual splits of the toxicity sample and is used to identify from which replicate a result originated. For toxicity replicates, the default is '1' and increases by one for each successive replicate. The LabReplicate should be recorded as '0' for water quality measurements.

AB. **ToxPointMethod** (R) ToxPointMethod refers to the general method used in obtaining or calculating the result. Toxicity replicate data have a default value of 'None' unless a method other than the test MethodName is used for the calculations. Water quality measurements have a default value of 'Probe'.

AC. **AnalyteName** AnalyteName refers to the parameter being measured. For toxicity samples use 'Survival'or 'Cell Count' as the default value. For water quality measurements use: pH, Ammonia as NH3, Temperature, Alkalinity, SpecificConductivity, etc. Please see the ILRP SWAMP2.5 Comparable Lookup Lists for applicable codes.

AD. **FractionName** FractionName is a specific descriptor of the Analyte. Ammonia as NH3 is expressed as Total or Unionized, each of which would be expressed as the Fraction, distinguishing the appropriate Analyte. If there is no need for further description of the analyte the default value is 'None'

AE. **WQ Source** WQSource differentiates between water quality measurements taken in the overlying water as well as in the sediment. This field should contain 'NA' for all measurements of toxicity survival. 'Overlyingwater' is used for the overlying water measurements which is the default for all water quality measurements. Interstitialwater is used for the interstitial water measurements.

AF. **Time Point** The Time Point indicates the time during the test at which the measurement was taken. For toxicity measurements, the value should reflect the final survival count, such as 'Day 4'. See the table below for species specific options. For water quality measurements, time points such as 'initial' or 'final' are used to indicate the measurements recorded at the beginning and end of the test.

AG. **UnitAnalyte** Enter the unit in which the toxicity result or water quality measurement is expressed. See Table 2 below for species specific options.

AH. **Result** Result is the numerical value from the toxicity test.

The toxicity Result is expressed as a real number rather than a calculation. The result should be reported with the appropriate number of significant figures. A result of 3.7266945 with 3 significant figures should be reported as 3.73. A result of 1.350 with 4 significant figures must display 1.350 in the Excel file. If you only see 1.35, that is the result that will be loaded to the database and the 4th significant figure will be dropped.

AI. **ResultQualCode** The Result Qualifier Code or ResultQualCode qualifies the analytical result of the sample.

This field may be left blank for results that are considered detected. When a result is Not Detected a ResultQualCode of ND is required. When a water quality measurement is made where the meter reads '0', '0' is eneterd as the result and ResQualCode is left blank. When the result is -88, a ResultQualCode is required. If the ResultQualCode value is NR for Not Recorded or NS for No Survival, then a reason for this code must be written into the ToxResultsComments field.

AJ. **ToxResultQACode** A ToxResultQACode is used to further qualify the analytical result of the sample. Due to the nature of what is required by the ILRP, this value may remain blank.

AK. **ToxResultsComments** In the ToxResultsComments field note any comments necessary to describe special circumstances for the toxicity results data for the specific record. These could be comments needed to clarify any portion of the analysis which is not described in any other field.

When the ResultQualCode value is NR for Not Recorded or NS for No Survival, then a reason for this code must be written into the ToxResultsComments field.

Table 2. Toxicity Analysis Species Specific Values

Test Duration	Organism Name	Analyte Name	WQ Source	ToxPoint Method	Time Point	Unit Analyte
10 Days	*Hyalella azteca*	Survival	NA	None	Day 10	%
4 Days	*Ceriodaphnia dubia*	Survival	NA	None	Day 4	%
4 Days	*Pimephales promelas*	Survival	NA	None	Day 4	%
4 Days	*Selenastrum capricornutum*	Cell Count	NA	None	Day 4	cells/ml

Column Heading Descriptions –ToxBatch Worksheet

Column: Label (R = Required, O = Optional) Description.

A. **ToxBatch** The ToxBatch is a unique code, provided by the laboratory, that represents a group of samples processed together. It groups all environmental samples with their supporting QA samples and will be used to verify completeness based on your QAPP. The value in this field connects this worksheet with the results worksheet. See *Appendix A* for guidelines on assigning laboratory batch IDs.

B. **LabAgency** AgencyCode refers to the organization, agency or laboratory that performed the analysis of the sample. Please see the ILRP SWAMP2.5 Comparable Lookup Lists for applicable codes.

C. **StartDate** The StartDate refers to the date the test began.

D. **RefToxBatch** RefToxBatch lists the Reference Tox Batch ID run with this batch of samples

E. **OrganismSupplier** OrganismSupplier refers to the agency that supplied the test organisms.

F. **OrganismAgeAtTestStart** OrganismAgeAtTestStart indicates the age or age range (e.g. 7 days or 7-10 days) of the test organisms at the beginning of the test. The age or range is usually recommended by the method.

G. **LabSubmissionCode** The LabSubmissionCode is a unique batch qualifier code assigned to the LabBatch as a whole which references the quality of the data in the LabBatch based on yours and the labs QAPP. If the LabSubmissionCode of A is used, meaning Acceptable you or the lab are ensuring that all QAQC protocols were met for the lab batch. If anything other than A is used, a LabBatchComment is required. If there are any QAcodes within the results worksheet other than 'None', then a code of A,MD must be used and a LabBatchComment must be included. Please see the ILRP SWAMP2.5 Comparable Lookup Lists for all applicable codes.

H. **SubmittingAgencyCode** This is the organization or agency that is responsible for submission of the data to the database.

I. **ToxBatchComm** LabBatchComments records any comments relating to the LabBatch as a whole, including any samples outside of criteria limits, any missing QC, etc.

Business Rules for Special Sample Types

Laboratory-generated QA samples (LABQA)

All samples generated from within the laboratory, such as CNEG, etc. have specific alternative rules, which are as follows:

B. **StationCode** LABQA

E. **ProtocolCode** Not Applicable

F. **LocationCode** Not Applicable

G. **SampleDate** Date test started, expressed as dd/mmm/yyyy

H. **CollectionTime** 0:00

I. **CollectionMethodCode** Not Applicable

J. **SampleTypeCode** CNEG

K. **Replicate** 1

L. **CollectionDepth** -88

M. **UnitCollectionDepth** m for water or cm for sediment

N. **ProjectCode** Not Applicable

O. **AgencyCode** Organization or agency that analyzed the sample

R. **Matrix** Water samples – 'labwater' or 'blankwater'
Sediment samples – 'blankmatrix' (commercially generated product) or 'sediment' (if laboratories used reference sediment)

Appendix A

ILRP SWAMP 2.5 File & Batch Name Guideline

File Name

XXXXX = Lab specific (same as in batch name if file is analysis specific)

Coalition_Matrix_AnalysisGroup_LabAgency_XXXXX_SampleDates

Examples

SJC_W_ PEST_APPL_55917_041508_Apr08

SJC_S_TOX_AQUA_SJ032508_Mar08

ESJ_W_BAC_INORG_M_CALTEST_I041093_Apr08

Batch Name

XXXXX = Lab specific

LabAgency_Coalition_XXXXX_Matrix_Analysis

Examples

Caltest_ESJ_MMS5891_W_TMLS

Caltest_SJC_WCO4012_W_NO2

APPL_ESJ_55336_012908_W_OP

NCL_ESJ_R51398A_W_GLY

NAUT_SJC_041508_S_HYA

ASL_SJC_012408b_W_CER

Appendix A ILRP SWAMP 2.5 File & Batch Name Guideline Acronym LookUp

COALITIONS

CRC	California Rice Commission
ESJ	East San Joaquin County Delta Water Quality Coalition
MED	Merced Irrigation District
MID	Modesto Irrigation District
OID	Oakdale Irrigation District
SAC	Sacramento Valley Water Quality Coalition
SJC	San Joaquin County Delta Water Quality Coalition
SID	South San Joaquin Irrigation District
SSJ	Southern San Joaquin Water Quality Coalition
TID	Turlock Irrigation District
WS	Westside Water Quality Coalition

LAB AGENCIES

APPL	APPL
Applied Marine Sciences, Inc.	AMS
AquaScience	AQUA
Babcock	BAB
Basic Laboratory, Inc.	BAL
BSK	BSK
California Laboratories Services	CLS
Caltest	CAL
CRG Marine Labs	CRG
DFG-Marine Pollution Studies Lab.	MPSL
DFG-Water Pollution Control Lab	WPCL
Fruit Grower's Laboratory	FGL
High Sierra Water Laboratory	HSWL
MLML-Trace Metals Lab	MLML-TM
North Coast Laboratories	NCL
Pacific Ecorisk	PER
Sierra Foothill Laboratory, Inc.	SFL
ToxScan	TS
The Twining Laboratories	TWL
UCD-ATL	ATL
UCD-EQL	EQL
UCD-GC	GC

MATRICES

Interstitial water	I
Sediment	S
Tissue	T
Vegetation	V
Water	W

CONVENTIONAL WATER CHEMISTRY GROUPS (FILES WITH MULTIPLE ANALYSIS)

Bacteria	BACT
Inorganics	INORG
Metals	M
Pesticides	PEST
Toxicity	TOX

CONVENTIONAL WATER CHEMISTRY ANALYSES (BATCHES AND NON-GROUPED FILES)

Alkalinity as CaCO3	ALK	Nitrite as N	NO2
Ammonia as N	NH3	Nitrate as N	NO3
Bicarbonate as CaCO3	BiCO3	Nitrate + Nitrite as N	NO3+2
Biological Oxygen Demand	BOD	Oil and Grease	O&G
Boron	B	Orthophosphate as P	OPO4
Bromide	Br	Perchlorate	ClO4
Carbonate as CaCO3	CO3	pH	pH
Chemical Oxygen Demand	COD	Pheophytin a	PHEO
Chloride	CL	Phosphorous, Total as P	TPHOS
Chlorophyll a	CHL	Potassium	K
Color	COLOR	Sulfate	SO4
Conductivity	COND	Suspended Sediment Concentration	SSC
Cyanide	CN	Total Dissolved Solids	TDS
Dissolved Organic Carbon	DOC	Total Kjeldhal Nitrogen	TKN
Fluoride	F	Total Organic Carbon	TOC
Hardness as CaCO3	HARD	Total Suspended Solids	TSS
Hydroxide as CaCO3	OH	Turbidity	TURB
MBAS	MBAS		

ORGANIC CHEMISTRY ANALYSES	
BTEX-MTBE	BTEX
Carbamates	CARB
Chlorothalonil/PCNB	C-PCNB
Diesel Range Organics	DRO
ELISA - Chlorpyrifos / Diazinon	EL-OP
Glyphosate	GLY
Herbicides	HERB
Musk	MSK
NonylPhenols	NP
Organochlorine Pesticides	OCH
Organophosphate Pesticides	OP
Paraquat	PQT
Pentachlorophenol/Trichlorophenol	PCP-TCP
Phenolics	TPHNL
Polychlorinated Biphenyls Congeners	PCB
Polynuclear Aromatic Compounds	PAH
Polybrominated Diphenyl Ethers	PBDE
Pyrethroids / Pyrethrins	PYD-PYN
Semi-Volatile Organic Compounds	SVOC
Surfactants	SURF
Tributyltin / Dibutyltin	TBT
Triazines	TRIAZ
Volatile Organic Compounds	VOC

SEDIMENT PHYSICAL CHARACTERISTIC ANALYSES	
Grain Size	GS

METAL CHEMISTRY ANALYSES	
Mercury	Hg
Metals	M
Selenium	Se
Trace Metals	TM
Trace Metals – High Salinity	TMHS
Trace Metals – Low Salinity	TMLS

TOXICITY ANALYSES	
All analyses	TOX
Ceriodaphnia	CER
Selenastrum	SEL
Pimephales	PIM
Hyalella	HYA

BACTERIA ANALYSES	
All analyses	BAC

TISSUE ANALYSES	
Lipids	LIP